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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,576	10/16/2003	Hugo Michiels	MICH3003/JEK	7180
23364	7590	09/10/2007	EXAMINER	
BACON & THOMAS, PLLC			NI, SUHAN	
625 SLATERS LANE			ART UNIT	
FOURTH FLOOR			PAPER NUMBER	
ALEXANDRIA, VA 22314			2615	
			MAIL DATE	DELIVERY MODE
			09/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/685,576	Applicant(s) MICHIELS, HUGO	
	Examiner Suhan Ni	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-21 and 23-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-21 and 23-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application (PTO-152) |
| 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

1. This communication is responsive to the applicant's response filed on 06/12/2007.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 15-21 and 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azima et al. (U. S. Pat. - 6,169,809) in view of Bank et al. (U. S. Pat. - 6,985,596).

Regarding claim 15, Azima et al. disclose a transducer, comprising: a membrane (2) onto which is provided a generally circular piezoelectric element (9), the membrane composed of a plurality of layers (21-22) of which at least one layer is made of a polymer; wherein the piezoelectric element has two radial surfaces, an entirety of one of the radial surfaces being directly engaged into onto the membrane (Fig. 4), and the membrane is not round and lacks symmetry over 360 degrees in relation to the shape of the piezoelectric element (Fig. 3) as claimed.

But Azima et al. do not clearly teach how to attach the first surface of the circular piezoelectric element to the membrane as claimed.

Bank et al. disclose a similar structured loudspeaker including a piezoelectric transducer (8) mounted on a vibrating surface of a membrane (1) by adhesive (col. 5, lines 38-41). Therefore, it would have been obvious to one skilled in the art at the time the invention was

made to be motivated to provide suitable and commercially available adhesive agent, such as volatile acrylic glue for rapidly and firmly bond the entire piezoelectric driver to the vibrating membrane of the transducer, in order to efficiently and effectively assemble the transducer.

Regarding claims 16-21 and 23-26, Azima et al. further disclose the transducer, wherein at least one layer of the membrane is made of metal (col. 3, lines 2-67) as claimed. But Azima et al. and Bank et al. may not clearly teach for all the details of the material of the membrane as claimed. Since providing a suitable material, such as synthetic material for the diaphragm of a panel speaker is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to be motivated to provide suitable material, such as synthetic foam material for the core and metallic foils for the surface layers, for the membrane of the transducer as an alternate choice, in order to provide a relatively light and durable speaker.

Regarding claims 27-28, Azima et al. further disclose the transducer, wherein the membrane is glued (20) to a holder (1) as claimed

Regarding claim 29, Azima et al. further disclose the transducer, wherein at least one layer of the membrane is part of a wall (102), in particular the wall of a housing of a device (Fig. 3) as claimed.

Regarding claim 30, Azima et al. further disclose the transducer, wherein at least one groove (100) is provided in the membrane.

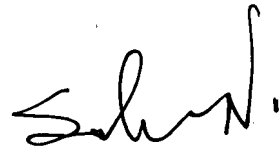
Response to Amendment

3. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Suhan Ni** whose telephone number is (571)-272-7505, and the number for fax machine is (571)-273-7505. The examiner can normally be reached on Monday through Thursday from 10:00 am to 8:00 pm. If it is necessary, the examiner's supervisor, **Sinh N. Tran**, can be reached at (571)-272-7564.
5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov/>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).
6. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571)-272-2600, or please see <http://www.uspto.gov/web/info/2600>.

8/27/2007


SUHAN NI
PRIMARY EXAMINER